SYLLABUS

MED INF 405: HIT Integration, Interoperability & Standards
Summer 2008

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Location: Distance Learning
Day/Time: Synchronous online class sessions are on Wednesdays from 7-9 PM central time

Description:

This course will provide the details of healthcare information technology standards and interoperability. The value proposition of standards will be presented. The course will review health information models and look at the IHE Initiative, HL7, DICOM, CCOW, and other standards. The course will also cover multi-institutional issues and telemedicine, e-commerce, and Health Insurance Portability and Accountability Act (HIPAA) standards compliance.

Student Learning Goals:

At the completion of the HIT Integration, Interoperability & Standards course, students should be able to:
• Describe the benefits of standards-based HIT interoperability
• Identify the resources necessary for an HIT integration project
• Utilize appropriate HIT standards in an integration project
• Be able to navigate through US national interoperability standards
• Understand the policy issues in intra- and inter-institutional health data exchange

Prerequisites:

MED INF 401 – American Health Care System

Teaching Method:

The class is scheduled for nine weekly sessions. The course content will be delivered using a combination of assigned readings, asynchronous discussions, synchronous class sessions, individual assignments, and a team project. A cumulative final exam will be given.

Deliverables:
All deliverables for this class will be turned in using the course website. There are two primary ways to turn in a deliverable, using the Discussion Board or the Submit functionality. The assignment descriptions indicate which method to use. Course work is generally not to be turned in using email or other methods.

All due dates for the deliverables correspond to the synchronous class session dates.

**Synchronous class sessions:**

Attendance is required for all scheduled synchronous class sessions. Failing to attend will affect your participation score.

<table>
<thead>
<tr>
<th>Session</th>
<th>Date/Time</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Session 1</td>
<td>June 25, 2008</td>
<td>(No 7-9 PM session)</td>
</tr>
<tr>
<td>Session 2</td>
<td>July 2, 2008</td>
<td>Individual assignment</td>
</tr>
<tr>
<td>Session 3</td>
<td>July 9, 2008</td>
<td>Guest speaker</td>
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<tr>
<td>Session 4</td>
<td>July 16, 2008</td>
<td>Guest speaker</td>
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<tr>
<td>Session 5</td>
<td>July 23, 2008</td>
<td>Team assignment</td>
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<tr>
<td>Session 6</td>
<td>July 30, 2008</td>
<td>(No 7-9 PM session)</td>
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<tr>
<td>Session 7</td>
<td>August 6, 2008</td>
<td>Individual assignment</td>
</tr>
<tr>
<td>Session 8</td>
<td>August 13, 2008</td>
<td>Team assignment</td>
</tr>
<tr>
<td>Session 9</td>
<td>August 20, 2008</td>
<td>(No 7-9 PM session)</td>
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</tbody>
</table>

**Asynchronous discussions:**

The entire class benefits from hearing diverse points of view. Students should encourage one another to voice their thoughts. Participation is required by all students.

Due for sessions 1-8

Create three new discussion threads per week under the appropriate forum on the Discussion Board. Each thread should introduce an insightful and unique thought based on the readings for that session.

Review and respond to the thoughts of your classmates.

**Individual assignments:**

Due for session 1

1) Turn in a completed Proctor Approval Application to take the final exam. Specific instructions are provided on the application form. Please note that the application should not be sent to the instructor.

2) Use the Submit Work functionality to write a note confirming that a completed application has been turned in. Please note that this will go to the instructor.
3) Fill out the Pre-Course Survey and use the Submit Work functionality to turn it in.

4) Complete the asynchronous discussion requirements.

Due for session 2
1) Investigate an organization related directly to HIT standards or interoperability. Prepare a Power Point presentation.

Topic ideas:
   - CCHIT, Connecting for Health, eHealth Initiative, HL7, IEEE, IHTSDO, ISO, OpenEHR

Areas to consider:
   • Scope of the standard or interoperability effort
   • Organizational structure or support
   • Key features
   • Flavor of details
   • Market impact
   • Resources

Present your work to the class during the synchronous class session. The entire presentation should last 6-8 minutes.

Post the presentation under the appropriate forum on the Discussion Board.

2) Complete the asynchronous discussion requirements.

Due for session 3
1) Complete the asynchronous discussion requirements.

Due for session 4
1) Complete the asynchronous discussion requirements.

Due for session 5
1) Complete the asynchronous discussion requirements.

Due for session 6
1) Complete the asynchronous discussion requirements.

Due for session 7
1) Research a significant and current problem related to HIT integration and interoperability. A topic associated with your current work environment is preferred.
Write a 4-6 page essay. The essay should contain a description of the problem as it currently exists, potential solutions, and your recommended solution. Be sure to explain the reasons why you have chosen your recommended solution. List your references.

Prepare a Power Point presentation for your essay. Present your work to the class during the synchronous class session. The entire presentation should last 6-8 minutes.

Post the essay and presentation under the appropriate forum on the Discussion Board.

2) Complete the asynchronous discussion requirements.

Due for session 8
1) Complete the asynchronous discussion requirements.

Due for session 9
1) Fill out the Post-Course Survey and use the Submit Work functionality to turn it in.

2) The Final Exam is due. Instructions will be provided on how to access and turn in the exam.

Team assignments:

Project description
Your team has been asked to design the electronic information integration structure for a new hospital. The documented design must include the following:

- Identify the hospital’s internal parties that need access to the hospital’s information.
- Identify the parties external to the hospital that need access to the hospital’s information.
- Identify the parties external to the hospital that the internal parties need information from.
- Outline the business reasons why each party needs access to the information and which information they need access to.
- Describe the types of information systems that are needed to satisfy all of the information needs and how the systems are integrated.
- Prepare a diagram depicting how the information systems are connected.
- Specify which parties have access to which systems.
- Describe how standards are utilized in the design.
• List the individual data elements that are shared between the systems. Be sure to specify the origin of the data and the direction of the data flow.

Due for session 2
Form a project team. Each team can have up to 3 students.

Post a list of your team members under the appropriate forum on the Discussion Board.

Due for session 4
Prepare a written outline for your project.

Post the outline under the appropriate forum on the Discussion Board.

Due for session 5
Prepare a draft Power Point presentation for your project.

Present your work during the synchronous session. Each presentation should last 10-15 minutes.

Post the presentation under the appropriate forum on the Discussion Board.

Due for session 8
Prepare a 8-12 page written report for your project. Appendices may be added in excess of the 8-12 page report.

Prepare a final Power Point presentation for your project.

Present your work during the synchronous session. Each presentation should last 15-20 minutes.

Post the report and presentation under the appropriate forum on the Discussion Board.

Readings:

Students are not required to purchase a text book for this course. Reading materials are provided in electronic format. Readings should be completed by the date of the corresponding synchronous session. Students are encouraged to download the readings early to avoid problems associated with interruptions of service.

Session 1 - Introduction

1) Chapter 1 (pages 3-41)

2) Summary findings 1-10 and 12 (pages iii-vii)


**Session 2 - Value**

1) Executive summary (pages 1-28)


2) Executive summary (pages 1-6), chapter 1 (pages 7-11), chapter 2 (pages 13-20), chapter 12 (pages 133-136), and Appendix 1 (page 137)


**Session 3 - Standards**

1) Article (pages 78-82)


2) Sections I-IV (pages 1-23)

3) Article (pages 245-252)


Session 4- Telehealth & HIPAA

1) Article (12 pages)


2) Readiness Disclosure (4 pages)


3) Article (pages 65-74)


Session 5 - Coordination

1) Article (pages 22-24)


2) Article (pages 1-4)

3) Review slides and listen to a pre-recorded 1 hour webinar

http://www.himss.org/ASP/ContentRedirector.asp?ContentID=67565

4) Article (pages 1170-1179)


Session 6 - Implementation

1) Article (pages 207-216)


2) Article (pages 229-234)


3) Article (pages 303-310)

Session 7 - Operational Integration

1) Article (pages 385-390)


2) Article (pages 66-68)


3) Article (pages 418-426)


Session 8 - Clinical Decision Support

1) Article (pages 527-534)


2) Workbook (68 pages)

Session 9: August - Final Exam

No readings - Final Exam is due

Final exam:

The final exam is cumulative will be proctored. Each student must turn in a completed Proctor Approval Application according to the instructions on the application form.

The final exam can be taken during a one week period starting on August 14, 2008. The exam must be completed by August 20, 2008.

Evaluation Method:

The following weightings will be used to determine the final course grade:

10% - Individual presentation on an organization related directly to HIT standards or interoperability

15% - Individual essay (7%) and presentation (8%) on a significant and current problem related to HIT integration and interoperability

25% - Participation
  • Pre-course survey – 1%
  • Post-course survey – 1%
  • Proctor approval form – 1%
  • Participating in synchronous class sessions – 7%
  • Asynchronous discussions – 15%

25% - Team Project
  • List of team members – 1%
  • Outline – 1%
  • Draft presentation – 3%
  • Final presentation – 10%
  • Final report – 10%

25% - Final Exam

Grading scale:
A  93-100
A-  90-92
B+  88-89
B   83-87
B-  80-82
C+  78-79
C   73-77
C-  70-72
F   below 70

University Policies:

Students with Disabilities
In compliance with Northwestern University policy and equal access laws, we are available to discuss appropriate academic accommodations you may require as a student with a disability. Request for academic accommodations need to be made during the first week of the quarter, except for unusual circumstances, so arrangements can be made. Students are encouraged to register with Services for Students with Disabilities (SSD) for disability verification and for determination of reasonable academic accommodations. For more information, visit http://www.northwestern.edu/disability/

Academic Integrity at Northwestern
Students are expected to comply with University regulations regarding academic integrity. If you are in doubt about what constitutes academic dishonesty, please speak to us before the assignment is due and/or examine the University web site, “How to Avoid Plagiarism” at http://www.northwestern.edu/uacc/plagiar.html
Academic dishonesty includes, but is not limited to cheating on an exam (e.g., copying others’ answers, providing information to others, using a crib sheet) or plagiarism of a paper (e.g., taking material from readings without citation, copying another student’s paper). Failure to maintain academic integrity on an assignment will result in a loss of credit for that assignment – at a minimum. Other penalties may also apply. For more information, visit http://www.scs.northwestern.edu/student/issues/academic_integrity.cfm

Sexual Harassment Policy
It is the policy of Northwestern University that no male or female member of the Northwestern community – students, faculty, administrators or staff – may sexually harass any other member of the community. Sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature constitute harassment when: submission to such conduct is made or threatened to be made, either explicitly or implicitly, a term or condition of an individual’s employment or education; or submission to or rejection of such conduct is used or threatened to be used as the basis for academic or employment decisions affecting that individual; or such conduct has the purpose or effect of substantially interfering with an individual’s academic or professional
performance or creating what a reasonable person would sense as an intimidating, hospital, or offensive employment, educational, or living environment. For more information, visit http://www.northwestern.edu/sexual-harassment/policy/index.html.